

**5.4.5 Water Heater Efficiencies**

<u>Residential Type</u>	<u>Efficiency Parameter (1)</u>	<u>2005 Stock Efficiency</u>	<u>Minimum New Efficiency (2)</u>	<u>Best-Available New Efficiency (4)</u>
Electric Storage	EF	0.88	0.92	0.95
Electric Instantaneous	EF	(3)	0.93	1.00
Electric Heat Pump	EF	(3)	0.92	2.51
Gas-Fired Storage	EF	0.56	0.59	0.70
Gas-Fired Instantaneous	EF	(3)	0.62	0.98
Oil-Fired Storage	EF	0.55	0.51	0.68
Solar	SEF	N.A.	0.70	47
<u>Commercial Type</u>				
Electric Storage	Thermal Efficiency	98%	98%	100%
Gas-Fired Storage	Thermal Efficiency	82%	80%	99%
Oil-Fired Storage	Thermal Efficiency	77%	78%	84%

Note(s): 1) EF = energy factor and SEF = solar energy factor, which is the hot water energy delivered by the solar system divided by the electric or gas energy input to the system. 2) Based on a 40-gallon residential type tank. 3) Included in storage stock efficiency. 4) Based on data from 2011 for electric heat pump, gas-fired storage and instantaneous, and solar water heaters and data from 2005 for the other types.

Source(s): EIA, Supplement to the AEO 2007, Feb. 2007, Table 21 and Table 22 for stock efficiencies; GAMA, Consumer's Directory of Certified Efficiency Ratings for the Residential and Water Heating Equipment, Aug. 2005 for best-available efficiencies for electric storage, electric instantaneous, and oil-fired storage and all minimum efficiencies; EPA, Qualified Product Lists, Mar. 16, 2011 for best-available efficiencies for electric heat pump, gas-fired storage and instantaneous, and solar; and SRCC, Summary of SRCC Certified Solar Collector and Water Heating System Ratings, Apr. 2000, p. S16 - S20 for solar energy factors, Table 2.2, p. 4.